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(Project 4720-2005-016)

MIL-DTL-81581/5B

SUPERSEDING
MIL-H-81581/5A(2)
15 April 2002

DETAIL SPECIFICATION SHEET

HOSE ASSEMBLIES, BREATHING OXYGEN, LOW PRESSURE CONNECTOR TO REGULATOR

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for acquiring the hose assemblies described herein shall consist of this document and the issue in effect of MIL-DTL-81581.

1. SCOPE

1.1 Scope. This specification covers the detail requirements for three types and four styles of low pressure oxygen breathing hose assemblies from connector to regulator, with or without integrated services for communication continuity.

1.2 Classification. Hose and hose assemblies covered by this specification shall be of the following types and styles, as designated by the applicable MS number, as specified (see 6.2):

Type I	-	Hose assembly without integrated communication cable and without connector
Type II	-	Hose assembly with integrated communication cable and without connector
Type III	-	Hose with integrated microphone switch, communication cable and without connector
Style A Assembly	-	Type I hose with MS22058-1 connector installed
Style B Assembly	-	Type I hose with MS22058-2 connector installed

Comments, suggestions, or questions on this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code 491000B120-3, Highway 547, Lakehurst, NJ 08733-5100 or emailed to thomas.omara@navy.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.daps.dla.mil/.

Style C Assembly - Type II hose with MS22058-1 connector installed

Style D Assembly - Type III hose with MS22058-1 connector installed

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards and handbooks. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATION

MIL-DTL-81581	-	Hose Assemblies, Breathing Oxygen and Air: General Specification for.

DEPARTMENT OF DEFENSE STANDARDS

MILITARY

MS22055	-	Hose Assemblies, Oxygen Breathing, Connector to Regulator.
MS22058	-	Connector, Oxygen Hose to Regulator.
MS22064	-	Clamp, Hose.

(Copies of the above specifications are available online at http://assist.daps.dla.mil/quicksearch/ or http://assist.daps.dla.mil/ or from the Standardization Document Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Requirements. Requirements shall be in accordance with the general specification MIL-H-81581 and as specified herein.

3.2 Qualification. The hose furnished under this specification shall be products which are qualified for listing on the applicable qualified products list at the time set for opening of bids (see 4.1.1). Unless otherwise specified, each type and style shall be qualified separately.

3.3 First article. When specified, a sample shall be subjected to first article inspection (see 4.1.2).

3.4 Design and construction. The hose assembly shall be in accordance with the general specification and with the applicable hose assembly of MS22055.

3.4.1 Oxygen mask to regulator hose connector. A fitting, when required, as shown on MS22058, shall be attached to one end of the hose by means of MS22064 (canceled w/o supersedence) clamp. The clamp shall be tightened so that a pull of at least 40 pounds is required to separate the connector from the hose. One additional clamp shall be furnished for attaching the hose to the regulator.

3.5 Performance. Unless otherwise specified herein, the performance of the hose assembly shall be as specified in the general specification, consistent with the applicable performance requirements for the applicable tests and inspections specified herein.

3.5.1 Polarity (color code) and electrical continuity. When tested as specified in the general specification, the resistance measured between all points designed to be electrically connected shall be as specified in the general specification with an allowable resistance of 0.3 ohms per foot in length of the electrically wired portion of the hose.

3.5.2 Elongation. The Type I hose, when tested as specified in the general specification, shall show an increase in length of not less than 40 percent, except for the 12 inch or less lengths which shall show an increase in length of not less than 30 percent. The Types II and III hoses, when tested as specified in the general specification, shall show an increase in length of not less than 5 percent. The permanent set for all hoses shall be not greater than 5 percent.

3.5.3 Strength.

3.5.3.1 Tensile load. The hose, when tested as specified in the general specification, shall not separate from the end connector or the molded end.

3.5.3.2 Static load. The hose, when tested as specified in the general specification, shall not show a deflection on the outside diameter of the hose of more than 25 percent of the original value. The outside diameter of the hose, when checked as specified with the load removed, shall be within 5 percent of the original value.

3.5.4 Restraint cord elongation and tensile strength. When the applicable control drawing specifies a restraint cord, the restraint cord shall have a 30 percent maximum elongation and a minimum tensile strength of 70 pounds, when tested as specified in the general specification.

3.5.5 Weight. When tested as specified in the general specification, the weight of the Type I hose shall be not greater than 5.0 ounces per foot of nominal specified length of hose. The

weight of the Types II and III hoses shall be not greater than 7.0 ounces plus 6.0 ounces per foot of nominal specified length of hose.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspections. Sampling and inspections shall be in accordance with the general specification and as specified herein.

4.1.1 Qualification inspection. The qualification inspection of the hose assembly shall consist of the following examinations and tests from the general specification:

Visual examination
Polarity (color code) and electrical continuity, Procedure I
Insulation resistance, Procedure I
Elongation, Procedure II
Delamination, Procedure I
Odor, Procedure I
Cleanliness, Procedure I and II
Leakage, Procedure II
Flexibility
  Type I, Procedure II
  Types II and III, Procedure IV (under environmental conditions, Procedure III)
Minimum burst pressure, Procedure II
Tensile load, Procedure IV
Static load, Procedure I
Restraint cord elongation and tensile strength
Low temperature, Procedure I
High temperature, Procedure I
Flexibility endurance, Procedure II
Ozone resistance, Procedure II
Weight, Procedure I

4.1.1.1 Qualification samples. The qualification samples shall be as specified in the general specification MIL-H-81581 with the following exception:

a. Four 36-inch long hose assemblies of each type and style for which qualification is desired.

4.1.2 First article inspection. The first article inspection of the hose assembly shall consist of the applicable examinations and tests specified in the general specification with the applicable procedure as specified herein.

4.1.2.1 First article samples. The first article sample shall consist of four hose assemblies of each style contracted for.

4.1.3 Conformance inspection. Conformance inspection shall consist of the following tests from those required by the general specification. The sample size and acceptance criteria shall be as specified in the general specification.

Visual examination
Polarity (color code) and electrical continuity, Procedure I
Insulation resistance, Procedure I
Elongation, Procedure II
Delamination, Procedure I
Odor, Procedure I
Cleanliness, Procedure I and II
Leakage, Procedure II
Flexibility
  Type I, Procedure II
  Types II and III, Procedure IV (under environmental conditions, Procedure III)
Packaging

5. PACKAGING

5.1 Packaging. Packaging shall be in accordance with the general specification.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The hose assembly covered by this detail specification is intended for use in supplying breathing oxygen to aircrewman in the operation of aircraft. The hose assembly, which may or may not contain integrated communication services for aircrewmen in the operation of the aircraft, extends from the connector to the oxygen breathing regulating device.

6.2 Acquisition requirements. Acquisition requirements should be in accordance with the general specification.

6.3 Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationships to the last previous issue.

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